Section 1. Registration Information

Source Identification

Facility Name:	International Rectifier Epi Services
Parent Company #1 Name:	International Rectifier
Parent Company #2 Name:	

Submission and Acceptance

Submission Type:	Re-submission
Subsequent RMP Submission Reason:	5-year update (40 CFR 68.190(b)(1))
Description:	
Receipt Date:	24-Oct-2012
Postmark Date:	24-Oct-2012
Next Due Date:	24-Oct-2017
Completeness Check Date:	24-Oct-2012
Complete RMP:	Yes
De-Registration / Closed Reason:	
De-Registration / Closed Reason Other Text:	
De-Registered / Closed Date:	
De-Registered / Closed Effective Date:	
Certification Received:	Yes

Facility Identification

EPA Facility Identifier:	1000 0020 0524
Other EPA Systems Facility ID:	85210NTRNT55WJU

Dun and Bradstreet Numbers (DUNS)

Facility DUNS:	868624057
Parent Company #1 DUNS:	41674912
Parent Company #2 DUNS:	41674912

Facility Location Address

Street 1:	550 West Juanita Ave.
Street 2:	
City:	Mesa
State:	ARIZONA
ZIP:	85210
ZIP4:	
County:	MARICOPA

Facility Latitude and Longitude

Latitude (decimal):	33.382950
Longitude (decimal):	-111.843636
Lat/Long Method:	Interpolation - Digital map source (TIGER)
Lat/Long Description:	Center of Facility
Horizontal Accuracy Measure:	20
Horizontal Reference Datum Name:	North American Datum of 1983
Source Map Scale Number:	

Owner or Operator

Operator Name:	International Rectifier
Operator Phone:	(480) 668-4000

Mailing Address

Operator Street 1:	550 West Juanita Ave.
Operator Street 2:	
Operator City:	Mesa
Operator State:	ARIZONA
Operator ZIP:	85210
Operator ZIP4:	
Operator Foreign State or Province:	
Operator Foreign ZIP:	
Operator Foreign Country:	

Name and title of person or position responsible for Part 68 (RMP) Implementation

RMP Name of Person:	Mike May
RMP Title of Person or Position:	Director of Epi Operations
RMP E-mail Address:	mmay1@irf.com

Emergency Contact

Emergency Contact Name:	Keith Smith
Emergency Contact Title:	EH&S Manager
Emergency Contact Phone:	(480) 668-4000
Emergency Contact 24-Hour Phone:	(602) 768-5815
Emergency Contact Ext. or PIN:	
Emergency Contact E-mail Address:	ksmith3@irf.com

Other Points of Contact

Facility or Parent Company E-mail Address:	
Facility Public Contact Phone:	
Facility or Parent Company WWW Homepage Address:	

Local Emergency Planning Committee

LEPC:	Maricopa County LEPC

Full Time Equivalent Employees

Number of Full Time Employees (FTE) on Site:	104
FTE Claimed as CBI:	

Covered By

OSHA PSM :	Yes
EPCRA 302 :	Yes
CAA Title V:	
Air Operating Permit ID:	

OSHA Ranking

OSHA Star or Merit Ranking:

Last Safety Inspection

Last Safety Inspection (By an External Agency) Date:	24-Feb-2011
Last Safety Inspection Performed By an External Agency:	Contractor working on behalf of EPA

Predictive Filing

Did this RMP involve predictive filing?:

Preparer Information

Preparer Name:
Preparer Phone:
Preparer Street 1:
Preparer Street 2:
Preparer City:
Preparer State:
Preparer ZIP:
Preparer ZIP4:
Preparer Foreign State:
Preparer Foreign Country:
Preparer Foreign ZIP:

Confidential Business Information (CBI)

CBI Claimed:
Substantiation Provided:
Unsanitized RMP Provided:

Reportable Accidents

Reportable Accidents:	See Section 6. Accident History below to determine if there were any accidents reported for this RMP.

Process Chemicals

Process ID:	1000035488
Description:	International Rectifier
Process Chemical ID:	1000043014
Program Level:	Program Level 3 process
Chemical Name:	Hydrogen chloride (anhydrous) [Hydrochloric acid]
CAS Number:	7647-01-0
Quantity (lbs):	21000
CBI Claimed:	
Flammable/Toxic:	Toxic

Process NAICS

Process ID:	1000035488
Process NAICS ID:	1000035850
Program Level:	Program Level 3 process
NAICS Code:	334413
NAICS Description:	Semiconductor and Related Device Manufacturing

Section 2. Toxics: Worst Case

Toxic Worst ID: 1000029397

Percent Weight:	100.0
Physical State:	Gas liquified by pressure
Model Used:	Area Locations of Hazardous Atmospheres [ALOHA(R)]
Release Duration (mins):	10
Wind Speed (m/sec):	1.5
Atmospheric Stability Class:	F
Topography:	Urban

Passive Mitigation Considered

Dikes:	
Enclosures:	
Berms:	
Drains:	
Sumps:	
Other Type:	

Section 3. Toxics: Alternative Release

Toxic Alter ID: 1000031247

Percent Weight:	100.0
Physical State:	Gas liquified by pressure
Model Used:	Area Locations of Hazardous Atmospheres [ALOHA(R)]
Wind Speed (m/sec):	2.7
Atmospheric Stability Class:	D
Topography:	Urban

Passive Mitigation Considered

Dikes:	
Enclosures:	
Berms:	
Drains:	
Sumps:	
Other Type:	

Active Mitigation Considered

Sprinkler System:	
Deluge System:	
Water Curtain:	
Neutralization:	
Excess Flow Valve:	Yes
Flares:	
Scrubbers:	
Emergency Shutdown:	
Other Type:	

Section 4. Flammables: Worst Case

No records found.

Section 5. Flammables: Alternative Release

No records found.

Section 6. Accident History

No records found.

Section 7. Program Level 3

Description

In accordance with the requirements of the RMP regulations, IR Epi Services has implemented a Program 3 Prevention Program for HCl at facility. This program contains a variety of measures to prevent accidental releases, including, but not limited to, the following:

- Periodic hazard reviews and updates
- Periodic audits of the system and its operation
- Emergency response plan that is coordinated with local emergency response agencies

The HCl system is designed, installed, and maintained in accordance with all applicable regulations. IR Epi Services employees responsible for handling HCl are thoroughly trained on HCl safety procedures, and operation and maintenance procedures for HCl systems.

Program Level 3 Prevention Program Chemicals

Prevention Program Chemical ID:	1000037066
Chemical Name:	Hydrogen chloride (anhydrous) [Hydrochloric acid]
Flammable/Toxic:	Toxic
CAS Number:	7647-01-0
Prevention Program Level 3 ID:	1000031040
NAICS Code:	334413

Safety Information

Safety Review Date (The date on which the safety information was last reviewed or revised):	19-Oct-2012

Process Hazard Analysis (PHA)

PHA Completion Date (Date of last PHA or PHA update):	19-Oct-2012

The Technique Used

What If:	
Checklist:	
What If/Checklist:	
HAZOP:	Yes
Failure Mode and Effects Analysis:	
Fault Tree Analysis:	
Other Technique Used:	
PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update):	31-Dec-2012

Major Hazards Identified

Toxic Release:	Yes
Fire:	Yes

Explosion:	Yes
Runaway Reaction:	
Polymerization:	
Overpressurization:	Yes
Corrosion:	Yes
Overfilling:	Yes
Contamination:	Yes
Equipment Failure:	Yes
Loss of Cooling, Heating, Electricity, Instrument Air:	Yes
Earthquake:	
Floods (Flood Plain):	
Tornado:	
Hurricanes:	
Other Major Hazard Identified:	

Process Controls in Use

Vents:	Yes
Relief Valves:	Yes
Check Valves:	Yes
Scrubbers:	Yes
Flares:	
Manual Shutoffs:	Yes
Automatic Shutoffs:	Yes
Interlocks:	Yes
Alarms and Procedures:	Yes
Keyed Bypass:	Yes
Emergency Air Supply:	
Emergency Power:	Yes
Backup Pump:	
Grounding Equipment:	
Inhibitor Addition:	
Rupture Disks:	Yes
Excess Flow Device:	Yes
Quench System:	
Purge System:	Yes
None:	
Other Process Control in Use:	

Mitigation Systems in Use

Sprinkler System:	Yes
Dikes:	
Fire Walls:	
Blast Walls:	
Deluge System:	
Water Curtain:	
Enclosure:	
Neutralization:	
None:	
Other Mitigation System in Use:	

Monitoring/Detection Systems in Use

Process Area Detectors:	Yes
Perimeter Monitors:	
None:	
Other Monitoring/Detection System in Use:	

Changes Since Last PHA Update

Reduction in Chemical Inventory:	
Increase in Chemical Inventory:	Yes
Change Process Parameters:	
Installation of Process Controls:	
Installation of Process Detection Systems:	
Installation of Perimeter Monitoring Systems:	
Installation of Mitigation Systems:	
None Recommended:	
None:	
Other Changes Since Last PHA or PHA Update:	

Review of Operating Procedures

Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures):	17-May-2012

Training

Training Revision Date (The date of the most recent review or revision of training programs):	27-Apr-2012

The Type of Training Provided

Classroom:	Yes
On the Job:	Yes
Other Training:	Online

The Type of Competency Testing Used

Written Tests:	
Oral Tests:	Yes
Demonstration:	Yes
Observation:	Yes
Other Type of Competency Testing Used:	Online test

Maintenance

Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures):	22-Oct-2012
Equipment Inspection Date (The date of the most recent equipment inspection or test):	07-Jan-2012
Equipment Tested (Equipment most recently inspected or tested):	HCl Tube Trailer and Associated Piping

Management of Change

Change Management Date (The date of the most recent change that triggered management of change procedures):	05-Apr-2012
Change Management Revision Date (The date of the most recent review or revision of management of change procedures):	22-Oct-2012

Pre-Startup Review

Pre-Startup Review Date (The date of the most recent pre-startup review):	07-Jan-2012

Compliance Audits

Compliance Audit Date (The date of the most recent compliance audit):	18-Oct-2012
Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit):	31-Dec-2012

Incident Investigation

Incident Investigation Date (The date of the most recent incident investigation (if any)):	
Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation):	

Employee Participation Plans

Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans):	18-Oct-2012

Hot Work Permit Procedures

Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures):	18-Oct-2012

Contractor Safety Procedures

Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures):	18-Oct-2012
Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance):	18-Oct-2012

Confidential Business Information

CBI Claimed:

Section 8. Program Level 2

Section 9. Emergency Response

Written Emergency Response (ER) Plan

Community Plan (Is facility included in written community emergency response plan?):	Yes
Facility Plan (Does facility have its own written emergency response plan?):	Yes
Response Actions (Does ER plan include specific actions to be taken in response to accidental releases of regulated substance(s)?):	Yes
Public Information (Does ER plan include procedures for informing the public and local agencies responding to accidental release?):	Yes
Healthcare (Does facility's ER plan include information on emergency health care?):	Yes

Emergency Response Review

Review Date (Date of most recent review or update of facility's ER plan):	08-Dec-2011

Emergency Response Training

Training Date (Date of most recent review or update of facility's employees):	29-May-2012

Local Agency

Agency Name (Name of local agency with which the facility ER plan or response activities are coordinated):	Maricopa County LEPC
Agency Phone Number (Phone number of local agency with which the facility ER plan or response activities are coordinated):	(602) 273-1411

Subject to

OSHA Regulations at 29 CFR 1910.38:	Yes
OSHA Regulations at 29 CFR 1910.120:	Yes
Clean Water Regulations at 40 CFR 112:	Yes
RCRA Regulations at CFR 264, 265, and 279.52:	Yes
OPA 90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, or 30 CFR 254:	Yes
State EPCRA Rules or Laws:	Yes
Other (Specify):	

Executive Summary

International Rectifier (IR) Epi Services owns and operates a semiconductor epitaxy (Epi) wafer facility (SIC code 3674) in Mesa, Arizona. IR Epi Services is located at 550 West Juanita Avenue in Mesa, Maricopa County, Arizona. The approximate location of IR Epi Services is 33.383056 Latitude and -111.843889 Longitude.

IR Epi Services utilizes anhydrous hydrogen chloride (HCl) for the wafer etching steps and process cleaning steps performed at the facility. HCl is a listed chemical in the Occupational Safety and Health Administration (OSHA) Process Safety Management (PSM) regulations under Title 29 of the Code of Federal Regulations (29 CFR) §1910.119 (Process Safety Management of Highly Hazardous Chemicals), and a regulated substance under the United States Environmental Protection Agency (U.S. EPA) Risk Management Program (RMP) regulations under 40 CFR Part 68 (Chemical Accident Prevention Provisions). Since the manufacturing process at the IR Epi Services contains HCl in quantities greater than the PSM and RMP applicability threshold of 5,000 pounds, IR has developed and implemented RMP and PSM plans for the HCl storage and distribution systems at the Epi Services.

The covered process for PSM/RMP includes HCl in tube trailer to the Epi process chambers. The required elements of both the PSM and RMP plans are contained in this document. This executive summary is prepared in accordance with the requirements of 40 CFR §68.155, as part of the RMP plan.

ACCIDENTAL RELEASE PREVENTION AND EMERGENCY RESPONSE POLICIES

IR is committed to preventing accidental releases from Epi Services. HCl storage and distribution at the IR Epi Services is covered by an accidental release (Program 3) Prevention Program developed and implemented by IR. In addition, IR Epi Services has developed a site emergency response program, which includes, but is not limited to, procedures for response to an accidental release, procedures for informing public and local emergency response agencies, and employee training on emergency procedures.

STATIONARY SOURCE AND REGULATED SUBSTANCES HANDLED

IR Epi Services utilizes anhydrous hydrogen chloride (HCl) for the wafer etching steps and process cleaning steps at the facility. HCl is a regulated substance under 40 CFR Part 68, and a listed substance under 29 CFR §1910.119. The processes at the IR Epi Services contain anhydrous HCl in quantities greater than the RMP and PSM program applicability threshold of 5,000 pounds.

HCl is supplied to IR Epi Services by a Bulk Supply Gas System (BSGS) system that includes an HCl tube trailer provided by Linde. The BSGS system is located on-site at the north side of the IR Epi Services site. HCl is delivered from the tube trailer to the HCl distribution system through a single feed line to the production building.

GENERAL ACCIDENTAL RELEASE PREVENTION PROGRAM AND CHEMICAL-SPECIFIC PREVENTION STEPS

In accordance with the requirements of the RMP regulations, IR Epi Services has implemented a Program 3 Prevention Program for HCl at facility. This program contains a variety of measures to prevent accidental releases, including, but not limited to, the following:

- Periodic hazard reviews and updates
- Periodic audits of the system and its operation
- Emergency response plan that is coordinated with local emergency response agencies

The HCl system is designed, installed, and maintained in accordance with all applicable regulations. IR Epi Services employees responsible for handling HCl are thoroughly trained on HCl safety procedures, and operation and maintenance procedures for HCl systems.

FIVE YEAR ACCIDENT HISTORY

There have been no accidental releases of HCl from the covered process at the IR Epi Services in the past five years that have resulted in death, injury, or property damage on site, or known offsite impacts (deaths, injuries, evacuations, sheltering-in-place, property damage, or environmental damage).

EMERGENCY RESPONSE PROGRAM

An emergency response program was developed by IR Epi Services in accordance with the requirements of the RMP regulations. The key components of this program include:

- Development of emergency response plan containing the following elements:
- Procedures for informing public and local emergency response agencies
- Proper first-aid and emergency medical treatment
- Procedures for response after an accidental release
- Procedures for emergency response equipment use, inspection, testing, and maintenance
- Training for all employees
- Procedures for emergency response plan review and updates

PLANNED CHANGES TO IMPROVE SAFETY

A process hazard analysis was completed for the facility in accordance with the RMP Program 3 Prevention Program requirements. The process hazard analysis yielded the following action items:

- Post the Piping and Instrumentation Diagrams (P&IDs) in cabinets and Valve Manifold Boxes (VMBs)
- Evaluate need for continuous monitoring, detection/alarm system, or containment for outdoor HCl distribution lines

As required by RMP regulations, the process hazard analysis will be reviewed every five years to update HCl safety measures and implement improvements as needed to ensure the ongoing safe operation of the HCl systems at the facility.

OFFSITE CONSEQUENCE ANALYSIS

The RMP program requires affected facilities to determine offsite impacts resulting from a prescribed worst-case scenario (WCS). Per 40 CFR §68.25, the WCS is defined as the release of the entire volume of HCl from the single largest HCl storage tank or cylinder, over a period of 10 minutes.

In addition to the worst-case scenario, offsite impacts must also be determined for an alternative case scenario (ACS), which is defined as an incident that is more likely to occur than the worst-case scenario. For IR Epi Services, the alternative release scenario is defined as the release of HCl from the transfer line attached to the HCl tube trailer.

The following points summarize the approach used in the offsite consequence modeling analysis:

- The distances to the toxic endpoints for the WCS and ACS were determined using the U.S. EPA approved Area Locations of Hazardous Atmospheres (ALOHA) air dispersion model.
- Meteorological parameters for the analysis were obtained from 2009 through 2011 National Weather Service data collected at the Phoenix Sky Harbor International Airport.
- The offsite impacts were evaluated using LANDVIEW 6 software.

The following is a summary of the results obtained in the offsite consequence analysis:

Worst Case Scenario
Distance to Endpoint: 2.20 miles
Affected Population: 79,436

Alternate Case Scenario
Distance to Endpoint: 0.23 miles
Affected Population: 527